Figure 1

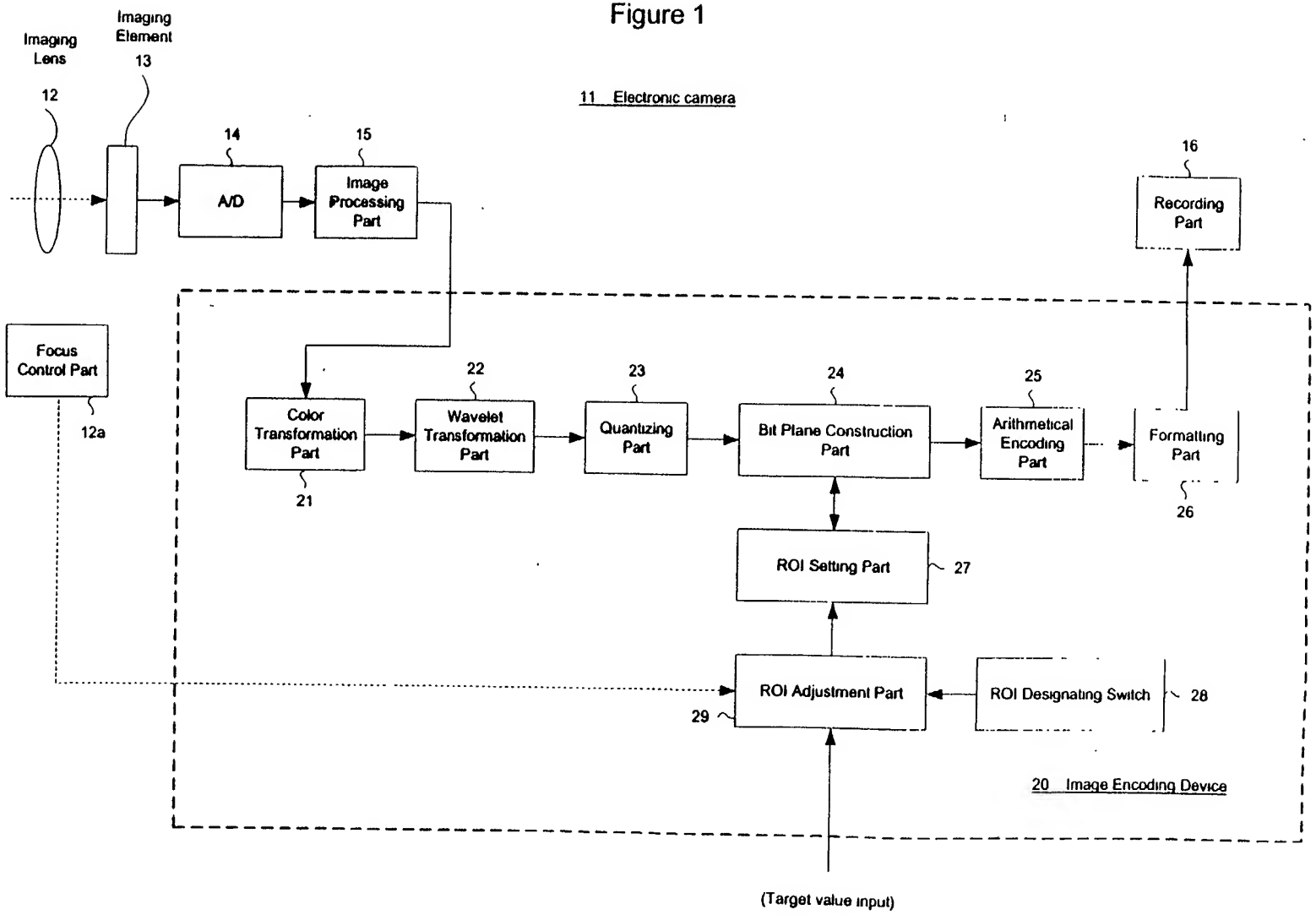
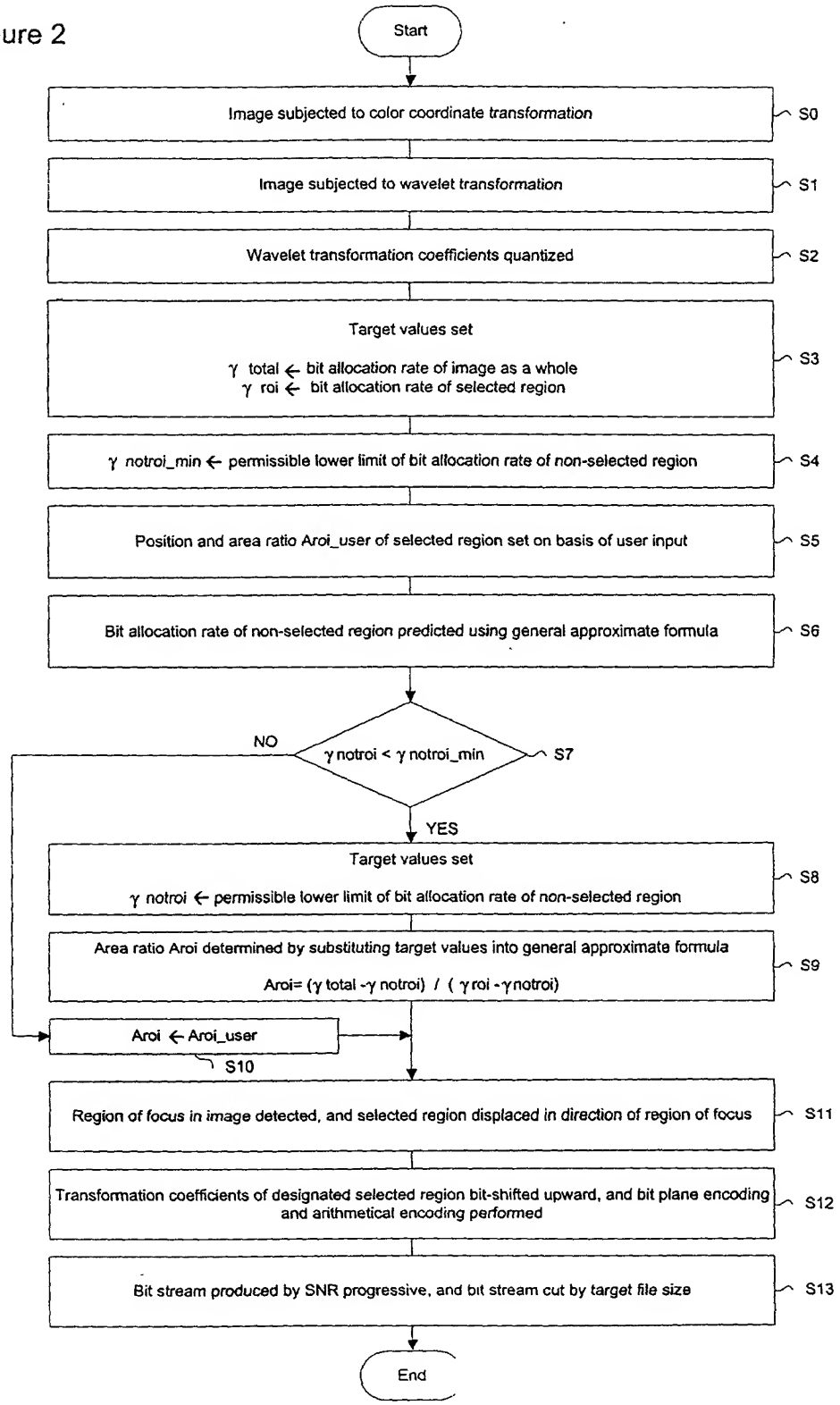

Imaging Lens
12
Imaging Element
13
11 Electronic camera
14
A/D
15
Image Processing Part
16
Recording Part
Focus Control Part
12a
22
Color Transformation Part
21
Wavelet Transformation Part
23
Quantizing Part
24
Bit Plane Construction Part
25
Arithmetical Encoding Part
Formatting Part
26
ROI Setting Part
27
ROI Adjustment Part
29
ROI Designating Switch
28
20 Image Encoding Device
(Target value input)

Figure 2



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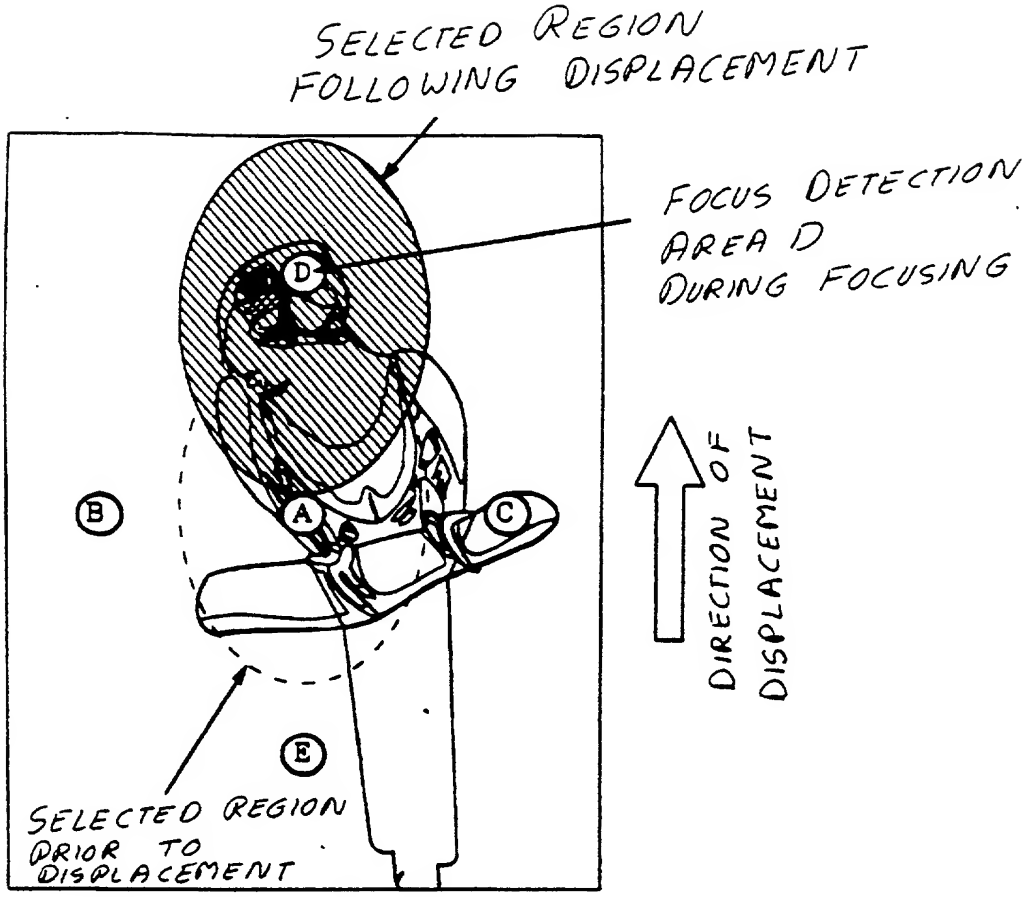

FIG. 3

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Figure 4

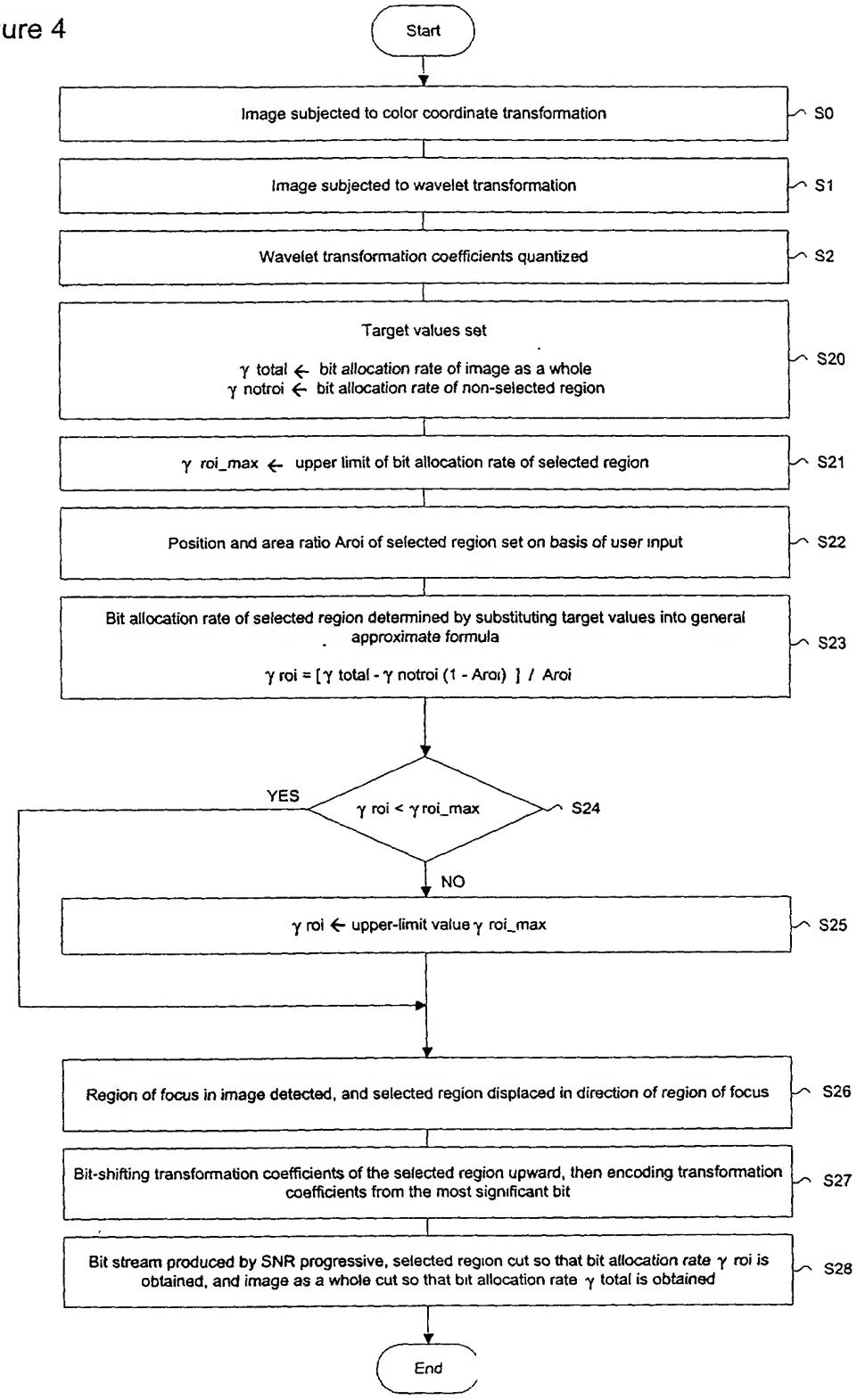

Start
Image subjected to color coordinate transformation
S0
Image subjected to wavelet transformation
S1
Wavelet transformation coefficients quantized
S2
Target values set
γ total ← bit allocation rate of image as a whole
γ notroi ← bit allocation rate of non-selected region
S20
γ roi_max ← upper limit of bit allocation rate of selected region
S21
Position and area ratio Aroi of selected region set on basis of user input
S22
Bit allocation rate of selected region determined by substituting target values into general approximate formula
γ roi = [γ total - γ notroi (1 - Aroi)] / Aroi
S23
YES
γ roi < γ roi_max
S24
NO
γ roi ← upper-limit value γ roi_max
S25
Region of focus in image detected, and selected region displaced in direction of region of focus
S26
Bit-shifting transformation coefficients of the selected region upward, then encoding transformation coefficients from the most significant bit
S27
Bit stream produced by SNR progressive, selected region cut so that bit allocation rate γ roi is obtained, and image as a whole cut so that bit allocation rate γ total is obtained
S28
End

Figure 5

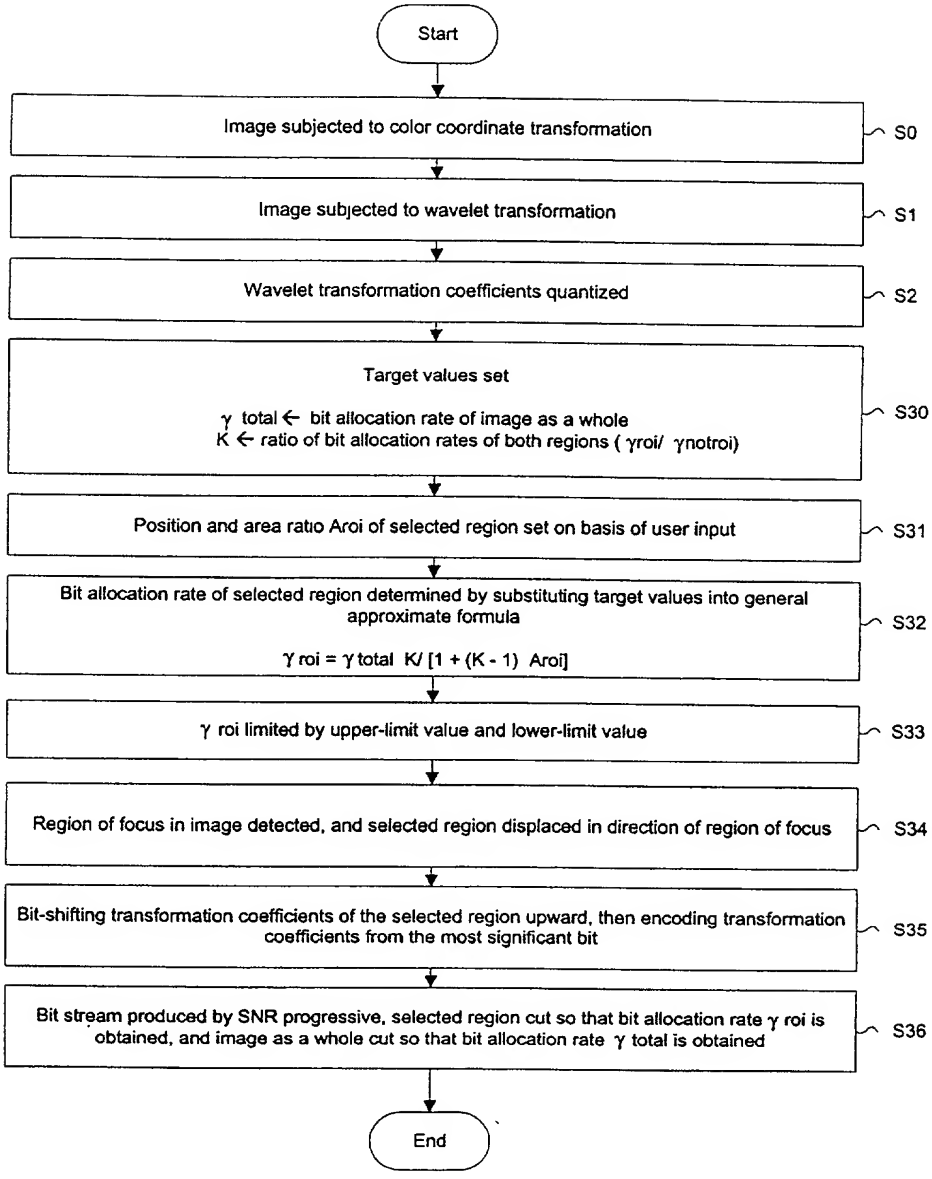

Start
Image subjected to color coordinate transformation
S0
Image subjected to wavelet transformation
S1
Wavelet transformation coefficients quantized
S2
Target values set
γ total ← bit allocation rate of image as a whole
K ← ratio of bit allocation rates of both regions (γroi/ γnotroi)
S30
Position and area ratio Aroi of selected region set on basis of user input
S31
Bit allocation rate of selected region determined by substituting target values into general approximate formula
γ roi = γ total K/ [1 + (K - 1) Aroi]
S32
γ roi limited by upper-limit value and lower-limit value
S33
Region of focus in image detected, and selected region displaced in direction of region of focus
S34
Bit-shifting transformation coefficients of the selected region upward, then encoding transformation coefficients from the most significant bit
S35
Bit stream produced by SNR progressive, selected region cut so that bit allocation rate γ roi is obtained, and image as a whole cut so that bit allocation rate γ total is obtained
S36
End

FIG. 6 (A-D)

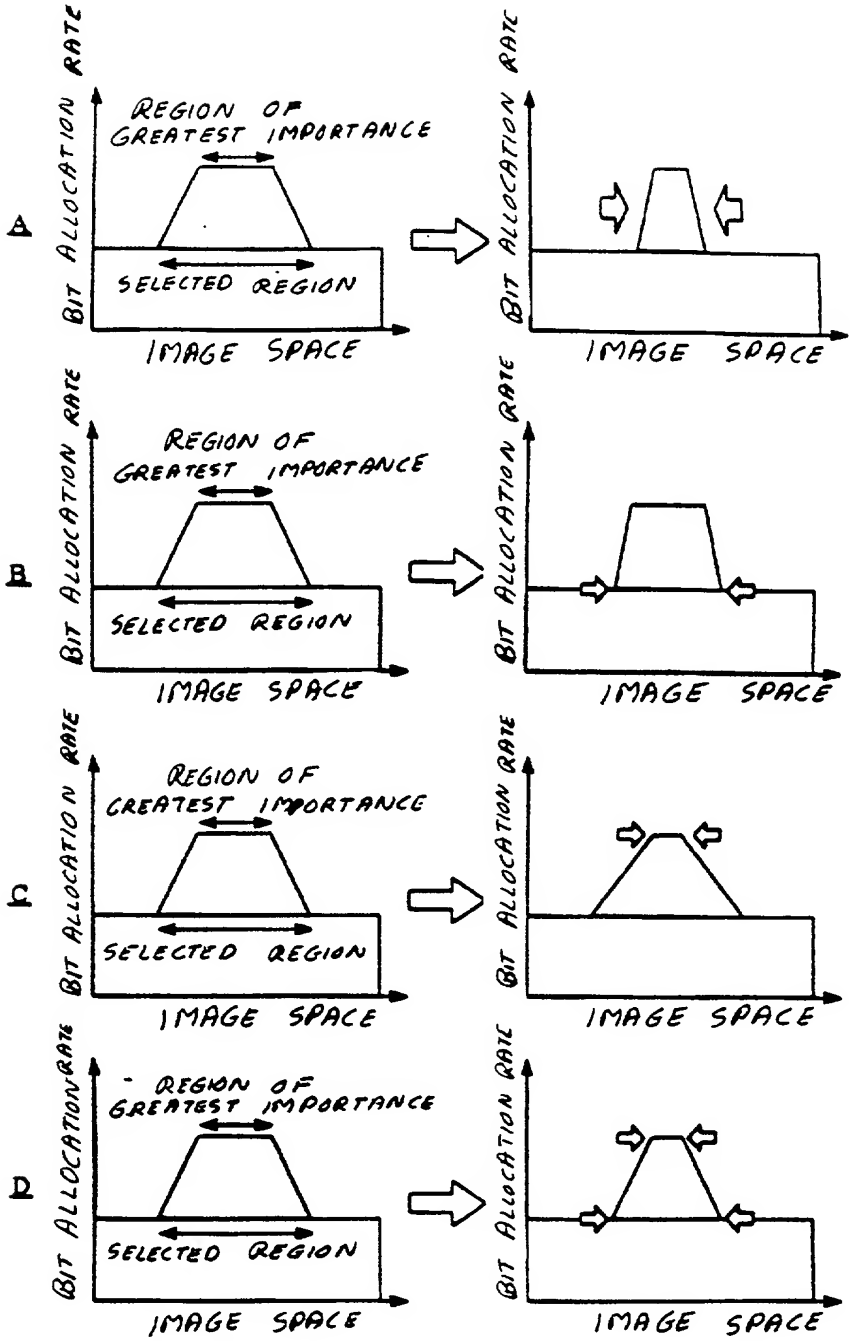
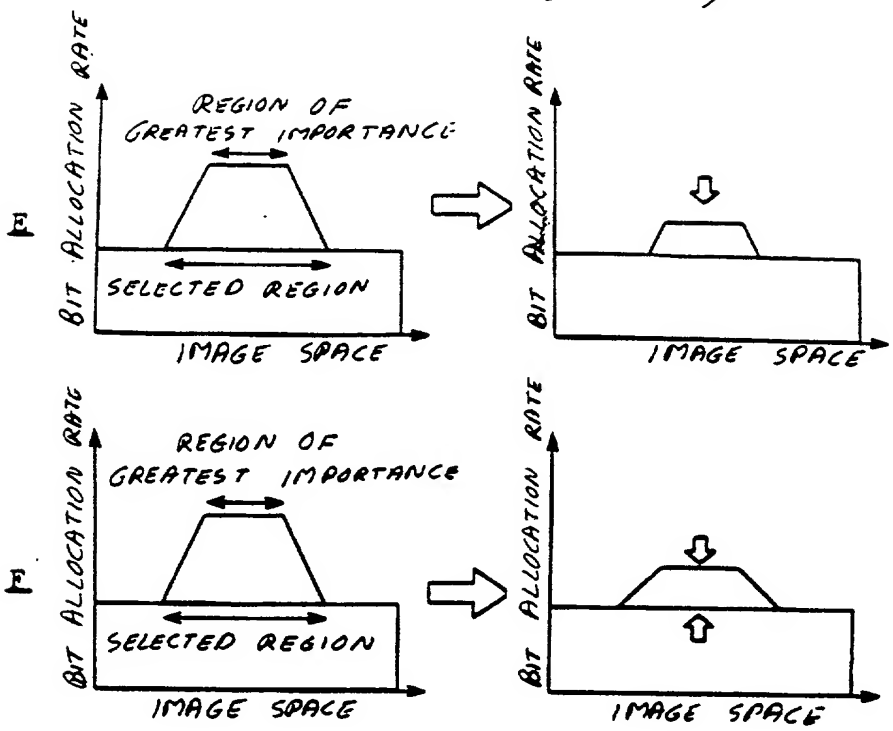

A
B
C
D
BIT ALLOCATION RATE
REGION OF GREATEST IMPORTANCE
SELECTED REGION
IMAGE SPACE

FIG. 6(E-F)


E
BIT ALLOCATION RATE
REGION OF GREATEST IMPORTANCE
SELECTED REGION
IMAGE SPACE
BIT ALLOCATION RATE
IMAGE SPACE
F
BIT ALLOCATION RATE
REGION OF GREATEST IMPORTANCE
SELECTED REGION
IMAGE SPACE
BIT ALLOCATION RATE
IMAGE SPACE